

REMARKS

The Applicant would like to thank the Examiner for the time and courtesy in extending an in person interview with the Applicant and Applicant's counsel at his office.

Claims 42, 47-52, 57-59, 67-68, and 70-71 are pending.

Claims 1-41 and 60-65 have been previously withdrawn have now been cancelled.

Claims 42, 47-52, 57-59, 67-68, and 70-71 are rejected.

Claims 43, 46, 53-56, and 66-69 have been cancelled.

Prior claims 57-59 were rejected under 35 USC §101.

Prior claims 42, 47-52, 57-59, 67-68, and 70-71 were rejected under 35 USC § 112 first paragraph.

Prior claims 57-59 were rejected under 35 USC § 102(b) as being anticipated by Loeb (US Patent 3,906,250).

Prior claims 42, 50-52, 67-68, and 70-71 were rejected under 35 USC §103(a) as being unpatentable over DE 3121968.

Prior claims 42 and 47-52 were rejected under 35 USC §103(a) as being unpatentable over Loeb in view of DE 3121968.

Claims 60-65 have been previously withdrawn and the Examiner has inadvertently included these claims in the rejection so that the Applicant is not addressing these claims in this response.

The Applicant would like to thank the Examiner for the courtesy of having a personal interview with the Applicant and the Applicant's attorneys, Jacob Erlich and Thomas Grodt, at the Examiner's office on January 22, 2008.

Rejection of claims 57-59 under 35 USC § 101

The Examiner has rejected claims 57-59 as being directed to non-statutory matter. In particular, the Examiner asserted that prior claim 57 recited only a natural phenomenon: the principal of osmosis. The Examiner further asserted that claim 57 is not directed to any practical application as the claims do not require any physical transformation to produce and sustain the

vacuum and the claims do not recite any physical structure that would enable one of ordinary skill in the art to make use of the vacuum so generated. The Applicant respectfully traverses this rejection.

It is clear under 35 USC 101 that "Whoever invents or discovers any new and useful **process**, machine, manufacture, or composition of matter, or any new and useful improvement thereof may obtain a patent therefor, subject to the conditions and requirements of this title." (emphasis added) To satisfy the dictates of 35 U.S.C. §101, an invention must be "useful." Courts have recognized that the term "useful" used with reference to the utility requirement can be a difficult term to define. *Brenner v. Manson*, 383 U.S. 519, 529, 148 USPQ 689, 693 (1966) (simple everyday word like "useful" can be "pregnant with ambiguity when applied to the facts of life."). Where an applicant has set forth a specific and substantial utility, courts have been reluctant to uphold a rejection under 35 U.S.C. 101 solely on the basis that the applicant's opinion as to the nature of the specific and substantial utility was inaccurate. Practical utility is a shorthand way of attributing "real-world" value to claimed subject matter. In other words, one skilled in the art can use a claimed discovery in a manner which provides some immediate benefit to the public. *Nelson v. Bowler*, 626 F.2d 853, 856, 206 USPQ 881, 883 (CCPA 1980).

The MPEP guidelines related to issues of non-statutory and useful matter include:

Practical considerations require the Office to rely on the inventor's understanding of his or her invention in determining whether and in what regard an invention is believed to be "useful." Because of this, Office personnel should focus on and be receptive to assertions made by the applicant that an invention is "useful" for a particular reason.

1. ...An invention does not lack utility merely because the particular embodiment disclosed in the patent lacks perfection or performs crudely . . . A commercially successful product is not required . . . Nor is it essential that the invention accomplish all its intended functions . . . or operate under all conditions . . . partial success being sufficient to demonstrate patentable utility....In short, the defense of non-utility cannot be sustained without proof of total

incapacity." If an invention is only partially successful in achieving a useful result, a rejection of the claimed invention as a whole based on a lack of utility is not appropriate. See *In re Brana*, 51 F.3d 1560, 34 USPQ2d 1436 (Fed. Cir. 1995); *In re Gardner*, 475 F.2d 1389, 177 USPQ 396 (CCPA), *reh'g denied*, 480 F.2d 879 (CCPA 1973); *In re Marzocchi*, 439 F.2d 220, 169 USPQ 367 (CCPA 1971). (MPEP 2107.01)

As amended, claims 57 recites a method for producing a vacuum, comprising the steps of:

providing a sealed first chamber;
providing a sealed second chamber;
providing a semi-permeable barrier separating the first chamber from the second chamber;
filling the first chamber with a solvent;
filling the second chamber with a solute solution;
providing fluid communication between the solvent and the solute solution to cause the solvent to flow from the first chamber to through the semi-permeable barrier into the second chamber;
utilizing the semi-permeable barrier to restrict the solute solution from entering the first chamber while allowing solvent to flow from the first chamber into the second chamber;
as the solvent flows from the first chamber into the second chamber a void is created in the first chamber thereby forming the vacuum to aid in the crystallization of the solute.

(Emphasis added)

Osmotic action occurs when solutions of different concentrations are allowed to mix with one another across a semi-permeable membrane. Osmotic action, *per se*, as the Examiner maintains, is a naturally occurring phenomenon. However, for osmosis to work, as specifically claimed by the Applicant, there is no requirement in nature for one or both of the containers that hold the different solutions to be sealed. During the interview with the Examiner, the Applicant provided a movie of the present invention in operation. As explained at the time, the machine would continue to run for several hours before dilution of the solute would render the ineffective. However, the fact that the machine did operate, which no one has disputed, means that fluid was flowing from the solvent chamber into the solute chamber and providing the pressure to operate the machine. Because the solvent chamber was sealed, and fluid flowed from that chamber, a

void is created in the volume of space equal to the volume of fluid that flowed into the solute chamber. The Applicant, by providing a sealed container, is providing a method step that is outside of the natural osmotic phenomenon and is creating an environment in which a void and vacuum may be formed within the sealed container due to the flow of fluid from the sealed container. The vacuum is a non-naturally occurring, useful, result that is the direct result of the process claimed by the Applicant. Therefore, claims 57-59 clearly define an invention that has utility and meets the criteria of 35 USC 101.

Rejection of Claims 42, 47-52, 57-59 67-68, and 70-71 under 35 USC § 112 First Paragraph

Before any analysis of enablement can occur, it is necessary for the Examiner to construe the claims. For terms that are not well-known in the art, or for terms that could have more than one meaning, it is necessary that the Examiner select the definition that he intends to use when examining the application, based on his understanding of what Applicant intends it to mean, and explicitly set forth the meaning of the term and the scope of the claim when writing an Office action. See *Genentech v. Wellcome Foundation*, 29 F.3d 1555, 1563-64, 31 USPQ2d 1161, 1167-68 (Fed. Cir. 1994).

Thus, in order to make an appropriate rejection, the Examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention. *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). The Examiner must provide a reasonable explanation as to why the scope of protection provided by a claim is not adequately enabled by the disclosure. Applicant's specification disclosure, which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 U.S.C. 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.

“As stated by the court, it is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain *why* it doubts the truth or accuracy of any statement in a supporting

disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement." (see MPEP 2164.04, internal quotations omitted) The examiner should always look for enabled, allowable subject matter and communicate to Applicant what that subject matter is at the earliest point possible in the prosecution of the application.

More specifically, 35 U.S.C. 112 requires the specification to be enabling only to a person "skilled in the art to which it pertains, or with which it is most nearly connected." In general, the pertinent art should be defined in terms of the problem to be solved rather than in terms of the technology area, industry, trade, etc. for which the invention is used.

The specification need not disclose what is well-known to those skilled in the art and preferably omits that which is well-known to those skilled and already available to the public. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986), cert. denied, 480 U.S. 947 (1987); and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1463, 221 USPQ 481, 489 (Fed. Cir. 1984). (MPEP 2164.05(a)). The evidence provided by Applicant to rebut the non-enablement rejection need not be conclusive but merely convincing to one skilled in the art.

In particular, the Examiner has objected to the specification alleging that there is no teaching related to the use of the vacuum or external heat required to vaporize the solvent solution, other than general statements. However, in the office action, the Examiner states that "Using vacuum for evaporation, particularly at ambient temperature is known in the art. One would use vacuum to increase the rate of evaporation and prevent air leak in to the system by maintaining a vacuum. ... DE teaches adding external energy to perform recycling process." Office Action dated 11/28/07, page 8, first full paragraph. Thus, the use of a vacuum to increase the rate of evaporation at ambient temperature and the addition of energy both were known in the art. The DE patent was applied for in 1981 and issued in 1983. Thus, the use of a vacuum to increase evaporation at ambient and the addition of external energy to a system to vaporize solvent was well known and should not need to be fully explained to those of ordinary skill in the art.

Applicant may submit factual affidavits under 37 CFR 1.132 or cite references to show what one skilled in the art knew at the time of filing the application. A declaration or affidavit is, itself, evidence that must be considered. (MPEP 2164.05).

In accordance with MPEP 2164.05, Applicant has submitted herewith, in Appendix B, a Declaration by Professor Grant W. McGimpsey, Ph.D. under 37 CFR 1.132 to support Applicant's contention that the specification is enabling for the claimed invention to one of ordinary skill in the art. More specifically, it is the opinion of Prof. McGimpsey that the system described in the patent application operates in three states. "In the initial state there is a concentration gradient between the solvent and pressure chambers caused by the osmotic pressure generated by the solute and solvent solutions across the semi-permeable membrane. In the intermediate state, an equilibrium has been achieved between the osmotic pressure exerted by the solvent chamber and the mechanical pressure exerted by the pressure chamber. To reach this intermediate equilibrium state, work will flow out of this system as a result of a piston moving in response to the generated fluidic pressure developed in the pressure chamber. Finally, in the third state, the system is regenerated to the initial state by the introduction of solute into the pressure chamber and solvent into the solvent chamber and by the addition of energy to the system." See paragraph 14 of Prof. McGimpsey's declaration.

Moreover, as stated in Prof. McGimpsey's declaration he opines that paragraph 64 provides a source of heat in the form of heating coils to provide energy for solvent evaporation, see paragraph 15. In addition as pointed out in paragraph 16, solar energy that is inputted into the system is utilized to regenerate the initial state of the system. It is Professor McGimpsey's opinion that, "[R]elying on ambient heat for regeneration will be a slow process, the system will work in this mode and that it is clear to one of ordinary skill in the art that some form of energy must be added to the system to regenerate the initial state and that for the system to work more effectively, other external sources of heat, for example, electric heating, using heating coils as discussed in Paragraph 0064, can be used." Paragraph 16, Declaration of Prof. McGimpsey,

Examples of cases further supporting Applicant's position are, for example, In *PPG Ind. v. Guardian Ind.*, 75 F.3d 1558, 1564, 37 USPQ2d 1618, 1623 (Fed. Cir. 1996), in which the court ruled that even though there was a software error in calculating the ultraviolet transmittance data for examples in the specification making it appear that the production of a

cerium oxide-free glass that satisfied the transmittance limitation would be difficult, the specification indicated that such glass could be made. The specification was found to indicate how to minimize the cerium content while maintaining low ultraviolet transmittance. (MPEP 2164.06(b)). In *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988), the court reversed the rejection for lack of enablement under 35 U.S.C. 112, first paragraph, concluding that undue experimentation would not be required to practice the invention. The nature of monoclonal antibody technology is such that experiments first involve the entire attempt to make monoclonal hybridomas to determine which ones secrete antibody with the desired characteristics. The court found that the specification provided considerable direction and guidance on how to practice the claimed invention and presented working examples, that all of the methods needed to practice the invention were well known, and that there was a high level of skill in the art at the time the application was filed. Furthermore, the applicant carried out the entire procedure for making a monoclonal antibody against HBsAg three times and each time was successful in producing at least one antibody which fell within the scope of the claims. (MPEP 2164.06(b))

In summary, as pointed out in MPEP 2164.08, all questions of enablement are evaluated against the claimed subject matter. The focus of the examination inquiry is whether everything within the scope of the claim is enabled. ... The Federal Circuit has repeatedly held that "the specification must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation'." *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). Nevertheless, not everything necessary to practice the invention need be disclosed. In fact, what is well-known is best omitted. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). All that is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art. Further the scope of enablement must only bear a "reasonable correlation" to the scope of the claims. See, e.g., *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970).

The present claimed invention is clearly described in the specification and the specification includes sufficient description when viewed by one of ordinary skill in the art that one can make and use the present invention. Therefore, based upon the above comments and further in light of the enclosed Declaration under 37 CFR 1.132, the specification clearly enables the claimed invention and meets all the criteria of 35 USC 112, first paragraph

Rejection of claims 57-59 under 35 USC §102(b)

Claims 57-59 have been rejected under 35 USC §102(b) as being anticipated by Loeb (US Patent 3,906,250). The Examiner alleges that Loeb inherently teaches a closed solvent chamber because the process taught in Loeb will eventually stop. The Applicant respectfully traverses this rejection,

The Examiner is incorrect in his assertion that the claims are anticipated by inherency. The Applicant agrees with the Examiner, that an element or method step would be inherent only if the prior art would **necessarily** perform the element or method step. An element or method step is necessary when the apparatus or method is inoperable without the element or method step, respectively. Thus for the proper operation of an apparatus or method, the element or method step must exist as part of the apparatus or method or the apparatus or method will not work.

The Examiner asserts that the Loeb reference inherently teaches a closed solvent chamber and relies upon col. 41, lines 25-53 and especially lines 47-50 in Loeb as proof of his assertion. The Examiner asserts that a closed solvent chamber is inherently taught because the process will eventually stop due to a lack of replacement fresh water. However, this is not what is taught in Loeb. Loeb teaches, at Col. 4, lines 45-50, that: "In the above example, this is a transient process and would ultimately stop because of dilution of sea water by the permeant. However, the process may be carried out continuously and several techniques for continuous conversion are described below with respect to different energy sources." Col. 4, lines 45-53.

The permeant is defined within Loeb as the fluid having the lower osmotic pressure, i.e., the fresh water. This would be equivalent to the solvent solution in the claimed invention. The fluid having the higher osmotic pressure is referred to in Loeb as the sea water. This would be equivalent to the solute solution in the claimed invention. Loeb teaches that the process will stop when the permeant has diluted the sea water and reduced the osmotic pressure of the sea water to a level below which permeant will not cross the semipermeable membrane. This is merely a statement of the natural osmotic process by which Loeb operates. Thus, Loeb teaches that the sea water solution must be recharged or sea water solution will become so diluted by the permeant that the osmotic pressure of the sea water is too low to sustain the transfer of permeant

across the semipermeable barrier. Without recharging the sea water solution, the Loeb process will stop, whether or not the fresh water is replenished.

The Examiner asserts that because the Loeb process will stop, it is inherent that the permeant chamber cannot be refreshed with fresh water and therefore must be closed. This does not logically follow from the teachings of Loeb. Loeb discusses the dilution of the sea water solution by the permeant as the means of stopping the process. Loeb teaches in Figs. 10-14 the use of a distillation plant 130 to separate sea water from fresh water and to recharge the sea water and re-supply the fresh water. However nowhere in Loeb does Loeb teach a sealed fresh water chamber. In fact in Loeb there is no mention that the permeant or fresh water chamber be closed or sealed at all. A word search of the Loeb reference only turns up a single use of the word "vacuum" at col. 11, lines 62-64—where Loeb discusses maintaining a vacuum in the condenser—and fails to turn up any mention of the word "closed" or "sealed" at all.

If in fact there were only one way to refresh the permeant system, i.e., the method taught in Loeb, then perhaps, that would also be an inherent limitation of the Loeb system. But there are many ways to provide the solvent chamber with fresh permeant, whether the solvent chamber is closed or open. For example, an open or closed permeant chamber may be refreshed with permeant by using a pumping system from an external source or from the distilled output of a recycling system, or via a gravity based siphon system to refresh it. It would not affect the operation whether the chamber were open or closed. Because there are many ways and methods to refill the solvent chamber that work whether or not the solvent chamber is closed, it is not a necessary condition for the operation of the Loeb device that the freshwater chamber be closed. Accordingly, a closed solvent chamber cannot be an inherent limitation in Loeb and therefore.

Accordingly, the Applicant asserts that it is not a necessary condition of Loeb for the solvent chamber to be closed in order for the Loeb apparatus to operate. Accordingly, because Loeb does not necessarily require a closed solvent chamber, there can be no inherent teaching of it. Therefore, the Applicant asserts that there can be no inherent teaching of a closed solvent chamber in Loeb.

The Examiner next asserts that Fig. 11 depicts a system which has a closed solvent container having only an inflow, wherein the solvent is at zero pressure. See office action , page 6. This also is not a fair reading of Loeb. The only mention of zero-pressure permeant is with

respect to Fig. 3, where the permeant is river water that flows into and out of the chamber having a semipermeable membrane.

Fig. 11 is a continuation of Figs. 9 and 10 and descriptions for Figs. 9 and 10 carry over for Fig. 11. Fig. 9 is described in pertinent part as: "Simultaneously a diluted solution, by which is meant one having a low osmotic pressure, (p_{low}), and having a volume of $\Delta V \text{ m}^3$ is pumped (by a pump not shown) via line 128 into the low hydraulic pressure side of the membrane unit 124. The diluted solution permeates through the membranes against the hydraulic pressure P because it is arranged that everywhere in the unit $P > \Delta P$ where ΔP is the osmotic pressure difference (atm) between the solutions on each side of the membrane. This is the fundamental principle of pressure-retarded osmosis, as described above." Col. 12, lines 31-41. The term "low hydraulic pressure side of the pressure chamber" is the side for the pressure chamber that is not under external pressure. Loeb teaches that this machine is a "pressure retarded osmotic machine. The solute solution, i.e., the solution with the higher osmotic pressure is pressurized in Loeb, See Loeb, col. 1 lines 58-63, col. 2 lines 5-12, Figs. 3, 3a, 4, 4a, 6, 9, 10, and 11 and the accompanying description. Thus, the low hydraulic pressure side is the side that is not pressurized by an external source, i.e., the solvent side of the system. It is clear that the pressure differential is not due to a closed solvent system, but rather it is due to the externally applied pressure to the solute solution.

The Examiner next asserts that claim 57 is not patentable because it is only an elaboration of the principle of osmosis. This is not true. See the above argument with respect to the rejections of claims 57-59 under 35 USC §101. To summarize the above argument, claim 57 recites providing sealed first and second chambers, filling the firsts and second chamber with a solvent and solute solution, respectively. Providing a semi-permeable barrier between the two chambers and allowing the solvent to flow from the first chamber into the second chamber. In the natural process of osmosis sealed chambers are not provided by nature. The Applicant has provided these chambers and is using the process of fluid flow across the semipermeable barrier to create a void in the first chamber, thereby creating a near vacuum in the void created as the fluid flows across the semipermeable membrane from the first to the second chambers. It is the applicant providing the conditions under which the void and vacuum are created, not nature.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP 2131.

Applicant respectfully states that amended independent claim 57 is not anticipated by Loeb for the reasons stated above and is therefore patentable over the Loeb reference. Claims 58-59 are depended from claim 57 and therefore are patentable for at least the same reasons as claim 57 and therefore are also not be anticipated by Loeb. Even further, a 35 USC § 103 rejection of claims 57-59 would not be applicable because to modify Loeb to meet the claimed invention is not obvious because changing Loeb to meet the claimed invention would change the operating characteristics of Loeb from a low pressure high volume system, necessary to drive a turbine, to a high pressure, low volume system necessary to drive the member in the claimed invention.

Rejection of Claims 42, 50-52, 67-68, 70-71 under 35 USC §103(a)

Claims 42, 50-52, 67-68, 70-71 are rejected under 35 USC §103(a) as being obvious over DE 3121968 (“the German reference”). The Examiner asserts that the German reference teaches the claimed invention except for the use of a vacuum for evaporating the recycling solvent, and that it would be obvious to use the vacuum to increase the rate of evaporation. The Applicant respectfully traverses this rejection.

The German reference fails to teach or suggest at least four aspects of claims 42 and 50. In particular, the German reference fails to teach or suggest: 1) a closed solvent chamber; 2) a third chamber for receiving a portion of the solute fluid; 3) applying energy to the portion of the solute solution contained in the third chamber for vaporizing the solute solution thereby separating the solute from the solvent; and 4) recycling the separated solute solution to the second chamber.

The German reference teaches only that the reaction chamber (3) [Note that the abstract has mislabeled the reaction vessel as 13] has fresh water pumped into the chamber by pump 22 via line 16 and allowed to leave by line 17, see the abstract and Fig. 1. There is no mention of closing or sealing the solvent side of the reaction chamber 3. None of the figures or descriptions teach the use of a sealed solvent chamber.

Moreover, the operation of the German reference is based on the continuous flow of fresh water, essentially at zero hydraulic pressure, through side 5 of the reaction vessel 3. A closed solvent side of the reaction chamber would prevent the continuous flow of water taught by the German reference and there is no teaching as to storage of the fresh water in a chamber as a substitute for the continuously pumped fresh water. Continuously pumping water into a chamber would change the operation of the German reference by providing water at higher than zero hydraulic pressure at the semi-permeable barrier between chambers 5 and 6 in the German reference. Because the German reference is also a pressure retarded system, as is Loeb, this increase in the fresh water pressure would reduce the retarding pressure and change the operational characteristics of the German reference, thus rendering the German reference less operational or even completely non-operational. Thus, there would be no motivation to modify the German reference to use a sealed a solvent chamber as claimed in independent claims 42 and 50.

In addition, in the German reference a duct 9 is provided for fluid leaving the power generating device 8 to provide for an exit path for fluid that has passed through the power generating device 8. Duct 9 is also attached to a discharge line 17, which is used for water leaving the second chamber 5. The second chamber 5 is the part of the reaction chamber 3 in which the lower osmotic pressure fluid (i.e., fresh water or solvent) flows through. Thus, the solute solution used in the power generating device, which is a mixture of the lower and higher osmotic pressure fluids, becomes even more dilute with the addition of the fluid from chamber 5 via line 17.

It would not be obvious to modify the German reference to form the claimed invention because the German reference would become non-operational. The German reference fails to discuss the use of a third chamber at al for any purpose much less recycling. In addition, the German reference fails to discuss the use of adding energy to the used solute solution to recycle the solute solution. As discussed above, the further dilution of the solute discharged via line 9 and the solvent solution discharged via line 17 would make it more difficult to recycle the solute due to the further dilution of the solute solution by requiring a great deal more energy to be added to the system. Thus, to provide a recycling system to the highly diluted solute solution would cause the apparatus taught in the German reference to become inoperative or operate at

vastly reduced capacity. Thus, there would be no motivation to modify the German reference to include a third chamber for recycling purposes.

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” (MPEP 2143)

Since the German reference does not teach or suggest all the limitations of independent claims 42 and 50, Applicant respectfully states that a *prima facie* case of obviousness has not been established and that claims 42 and 50 are patentable over the German reference.

Rejection of Claims 42, and 47-52 under 35 USC §103(a) as being obvious over Loeb in view of the German reference

Claims 42, and 47-52 are also rejected under 35 USC §103(a) as being obvious over Loeb in view of the German reference. The Examiner asserts that Loeb teaches the claimed invention except for the hydraulically powered piston, the teaching of which is provided by the German reference. The Applicant respectfully traverses this rejection.

As discussed above, Loeb fails to teach a sealed solvent chamber, which is an element in the independent claims 42 and 50. Moreover as discussed above, the German reference also fails to teach a solvent chamber at all, much less a sealed solvent chamber. Thus, neither reference provides a teaching for a sealed solvent chamber and there would be no reason to modify either reference to provide for a sealed chamber as in the claimed invention.

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” (MPEP 2143)

As discussed above, neither Loeb nor the German Reference, teach or suggest a sealed solvent chamber and, therefore, neither of two the prior art references do not teach or suggest all the limitations of independent claims 42 and 50. Applicant respectfully states that a *prima facie* case of obviousness has not been established and that claims 42 and 50 are patentable over Loeb in view of the German reference.

Claims 47-48 and 67 depend from claim 42 and are patentable for at least the same reasons as claim 42. Claims 51-52 and 68-71 depend from claim 50 and are patentable for at least the same reasons as claim 50.

Conclusion

Applicant respectfully submits that the above remarks clearly overcome the rejections under 35 USC §101 and §112, first paragraph. In addition, the claims as amended and the above remarks also establish the patentability of the claimed invention over the prior art both under 35 USC §§ 102 and 103. Favorable consideration and allowance are respectfully requested and since all withdrawn claims have been cancelled, the Examiner is respectfully requested to pass this case to issue.

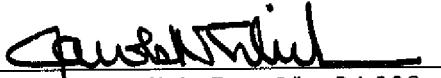
There are no additional fees required, however, the Director of Patents and Trademarks is authorized to charge any fee deficiencies, or to credit any overpayments, to Deposit Account No. 03-2410, Order No. 41613-101.

In accordance with Section 714.01 of the M.P.E.P., the following information is presented in the event that a call may be deemed desirable by the Examiner:

THOMAS GRODT(617) 345-3000.

Respectfully Submitted,
Irving DeVoe, Applicant

Date: March 12, 2008


Jacob N. Erlich, Reg. No. 24,338
On behalf of
Thomas P. Grodt
Attorney for Applicant
Reg. No. 41,045

Burns & Levinson LLP
125 Summer Street
Boston, MA 02110
Tel. 1 (603) 345-3253